This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-7. (canceled)

8. (currently amended) A ~~computer program product~~ control logic computer for use in a material transport system including a plurality of electromechanical devices ~~and a control computer~~, wherein ~~the computer program product~~ said control logic computer includes a computer memory ~~coupled to the control computer~~ and a computer mechanism defined therein, the computer mechanism comprising:

a plurality of control threads, each one of said plurality of control threads associated with a particular electromechanical device that configures ~~that configure~~ the control logic computer to control and monitor operations of the electromechanical devices;

wherein ~~one of the~~ a first control ~~threads~~ thread associated with a ~~particular~~ first electromechanical device ~~communicating~~ is configured to communicate with ~~others of the control threads~~ a second control thread associated with a ~~group of~~ second electromechanical ~~devices~~ device, ~~that~~ and to interact with the ~~particular~~ first electromechanical device, so that the ~~one control thread and the others~~ first and second control threads cooperatively accomplish a goal involving movement of material using the ~~particular electromechanical device and the group of~~ first and second electromechanical devices.

9. (currently amended) The ~~computer program product~~ control logic computer of claim 8, wherein:

the ~~particular~~ first electromechanical device is a ~~particular~~ first track zone and the ~~group of~~ second electromechanical ~~devices~~ device ~~are other~~ is a second track ~~zones~~ zone neighboring the ~~particular~~ first track zone, each of the first and second track zones being configured to accelerate the material;

such that the ~~one~~ first thread causes the particular track zone to accelerate the material to a target value, determines a ~~set of~~ future target ~~values~~ value to which the material should be accelerated by the ~~other~~ second track ~~zones~~ zone, and ~~issues~~

~~commands to~~ communicates with the ~~others of the~~ second control ~~threads~~ thread indicating ~~respective ones of~~ the ~~set of~~ future target ~~values~~ value.

10. (canceled)

11. (currently amended) The ~~computer program product~~ control logic computer of claim 8, wherein:

the material comprises a plurality of material units;

movement of each of the material units is independently controlled by one of said plurality of ~~the~~ control threads; and

each one of said plurality of ~~the~~ control threads ~~are~~ is configured so that the control threads that control the electromechanical devices composing a particular neighborhood in which a plurality of the material units are simultaneously moving can cooperatively accomplish a goal involving movement of the multiple material units towards respective destinations without collisions occurring.

12-18. (cancelled)

19. (currently amended) A distributed method for routing material from a source to a destination in a material transport system including track zones and directors connecting the track zones, wherein the directors include routing tables that store routing information ~~in the form of distance data~~ for a plurality of routes across the material transport system to a destination, the method comprising:

launching the material from the source;

~~when~~ if the material enters a track neighborhood that includes a director through which the material must pass to proceed to the destination, notifying the director ~~of the approach of the material~~;

the director, in response to the notifying, selecting an optimal route for the material based on the destination and stored routing information indicating for each material transport system destination a director exit angle and a metric characterizing quality of a path to the destination originating from the director exit angle; and

the director subsequently decelerating the material, rotating to the director exit angle associated with the optimal route and relaunching the material along the optimal route;

wherein said stored routing information is automatically generated or modified to accommodate changes to the material transport system.

20. (currently amended) The distributed method of claim 19, ~~further comprising~~ wherein:

~~modifying~~ the stored routing information is automatically modified to account for routes that become unavailable during operation of the material transport system.

21. (currently amended) The distributed method of claim 20, wherein a route becomes unavailable due to any single action selected from the group consisting of:

failure of the route's destination;

failure of a track zone between the director and the route's destination;

failure of one or more intervening directors between the director and the route's destination~~; and~~

~~disablement of the route by a material transport system operator~~.

22. (currently amended) The distributed method of claim 19, wherein ~~the metric associated with a particular exit angle and destination is determined~~ the stored routing information is automatically generated for a new director as follows:

(1) the new director sends a path query including a metric to an immediate downstream neighbor at the particular exit angle;

(2) in response to the path query:

(2a) when the immediate downstream neighbor is the destination: the destination increments the metric to indicate the quality of the route to the destination and returns the incremented metric to the new director;

(2b) when the immediate downstream neighbor is a track zone: the track zone increments the metric to indicate the quality of the route through the track zone to the destination, resends the path query with the incremented metric to an immediate downstream neighbor of the track zone, which repeats operation (2) recursively; and

(2c) when the immediate downstream neighbor is another director: the other director increments the metric to indicate quality of the route from the other director to the destination and returns the incremented metric to the new director.

23. (original) The distributed method of claim 19, wherein the metric is a function of at least one of:

route length;

route transit time; and

route congestion.

24. (currently amended) The distributed method of claim 19, ~~further comprising:~~ wherein the stored routing information is automatically modified to account for ~~(1) when~~ a new destination ~~is~~ being added to the material transfer system as follows,

(1) the new destination announces its presence to its immediate upstream neighbor using ~~a dest_announce~~ an announce message including a metric;

(2) in response to the ~~dest_announce~~ announce message:

(2a) when the immediate upstream neighbor is a track zone, the track zone increments ~~a~~ the metric ~~associated with the announce message that characterizes quality of a path from the new destination to the immediate upstream neighbor,~~ and resends the announce message with the updated metric to an immediate upstream neighbor of the track zone, which repeats operation (2) recursively;

(2b) when the immediate upstream neighbor is a first director: the first director increments the metric ~~to indicate quality of the route from the first director to the new destination,~~ stores the metric along with the exit angle and ~~identify~~ identity of the new destination and returns a registered message informing the new destination that it has been registered.

25. (original) The distributed method of claim 24, further comprising, when the immediate upstream neighbor is the first director:

the first director announces the new destination to adjacent directors with route announce messages indicating a cumulative metric representing the metric from the first director to the new destination and the metric between the first director and respective ones of the adjacent directors;

repeating an operation wherein each of the adjacent directors updates their stored information for an appropriate exit angle with the cumulative metric and resends the route announce message to their adjacent directors until the route announce message arrives back at the first director.

26. (original) The distributed method of claim 19, wherein the stored information for each of the routes comprises:

the destination;

the exit direction;

whether the route is direct, meaning there are no intervening directors, or via, meaning there is at least one intervening director;

the metric characterizing goodness of the route; and

the route status.

27. (original) The distributed method of claim 19, further comprising:

when the material comprises two or more material units moving in one neighborhood in need of routing through the director, the track zones cooperatively route the material units to the director so there is no possibility of a collision between the material units and the material units continue to move forward at optimal speeds.

28. (original) The distributed method of claim 19, wherein the track zones are unidirectional, further comprising:

configuring the transport system for bidirectional movement within one neighborhood by:

arranging a subset of the directors in a director cluster of two or more directors;

enabling exit angles for each of the directors in the director cluster to permit the material moving in one direction on a first unidirectional track zone segment in the neighborhood to be turned using two or more of the directors in the director cluster onto a second unidirectional track zone segment for movement in another direction in the neighborhood.

29. (original) The distributed method of claim 28, wherein the director cluster comprises a number of directors selected to prevent deadlock conditions where one or more material units needing to move through the director cluster are prevented from moving due to each others presence in vicinity of the director cluster.

30. (new) The control logic computer of claim 9 wherein the computer mechanism further comprises:

a third control thread associated with a third electromechanical device which is a third track zone neighboring the second track zone, the third track zone configured to accelerate the material;

such that the first thread causes a future target value to which the material should be accelerated by the third track zone, and communicates with the third control thread indicating the future target value.